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ALEXANDRIA, VA 22320-4850				
EXAMINER				
JOLLEY, KIRSTEN				
ART UNIT		PAPER NUMBER		
1792				
NOTIFICATION DATE		DELIVERY MODE		
12/31/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction27049@oliff.com  
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## Office Action Summary

**Application No.**

10/531,577

**Applicant(s)**

NORO ET AL.

**Examiner**

Kirsten C. Jolley

**Art Unit**

1792

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2009 and 23 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20, 21, 23-25, 27, 28 and 32-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20, 21, 23-25, 27, 28 and 32-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/3/09
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 28, 2009 has been entered.

### ***Response to Arguments***

2. The 35 USC 112, 1<sup>st</sup> paragraph rejections set forth in the prior Office action have been withdrawn in response to Applicant's amendments to the claims.
3. Applicant's arguments filed September 28, 2009 and October 23, 2009 have been fully considered but they are not persuasive.
4. In the arguments filed September 28, 2009, Applicant argues that the criticality of the features of the instant application is related to minimizing the peeling and the cracking of the outer peripheral surface, and that the asserted criticality of Gane would result in an optimal range for the thickness and width of the elastic body different from the recited range of the present application. Applicant states that Gane discloses that the flexible blade 5 has a thickness of 0.16 mm with a length of 16 mm, which falls outside the claimed range. This is not convincing to the Examiner. As discussed in the Advisory Action, Gane teaches in col. 3, lines 11-35 that "The flexible blade employed in the apparatus and method of the present invention should be

constructed and mounted so that when it is in contact with a web of cellulosic material its free edge flexes sufficiently to be substantially tangential to the web at the point of contact.” Also Gane teaches “the flexible blade should be mounted in a manner such that it applies enough pressure to limit the weight of wet paper coating composition which is allowed to pass beneath the flexible blade.” Thus it would have been obvious to one skilled in the art that if the flexible blade is too thin it would be too flimsy to supply sufficient pressure to the coating composition, however if the blade is too thick then it would not be flexible enough to flex sufficiently. Similarly, one skilled in the art would have recognized that if the width is too low then it will not be long enough to flex so as to be substantially tangential to the web, or if the width is too long then it may not result in a smooth coating surface or it may result in too much pressure or thinning of the applied coating material. Thus it is the Examiner’s position that one having ordinary skill in the art would have recognized from Gane that the optimum width and thickness of a flexible blade would be determined through routine experimentation depending upon the material being applied, the substrate material itself, the desired thickness, etc. to result in the proper amount of flex and placement and pressure with respect to the applied coating material. Because the substrate size and material and coating material are different than those of Gane, one skilled in the art would expect that the thickness and width of a flexible blade incorporated into the apparatus of Fukuta et al. would be different than taught for the invention of Gane. However the general principles taught in Gane would be applied to the modified process of Fukuta et al. in view of Gane.

Applicant also argues that the applied references fail to teach or render obvious a following mechanism which drives the smoother following the outer periphery of the pedestal

and/or the cam so that the smoother is disposed at a given position with respect to the outer peripheral surface of the pillar structure. The Examiner disagrees. Fukuta et al. specifically discloses first and second following rollers 36, 37 which follow the outer periphery of a pallet so that the smoother is disposed at a given position with respect to the outer peripheral surface of the pillar structure (col. 4, line 57 to col. 5, line 18).

In the supplemental arguments filed October 23, 2009, Applicant argues that Fukuta does not provide any reason for one of ordinary skill in the art to replace the material used in the doctor blade with a material other than SUS stainless steel or wear resistant ceramic material. The Examiner acknowledges that Fukuta does not disclose use of a flexible material, however the Gane reference provides this teaching. Gane teaches that the flexible blade of its invention achieves improved coating such as a much smoother flow of coating composition under the blade as compared to a prior art steel doctor blade, resulting in a more smooth, level coating. The test of obviousness is not express suggestion of the claimed invention in any or all references but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183 (CCPA 1965); *In re Hedges*, 783 F.2d 1038.

Applicant further argues that the flexible blade 5 is used as an applicator and the thin spring steel trailing blade 11 is used to smooth and level the coating. The Examiner notes that flexible blade 5 does help to apply the coating solution, however it helps to smooth and level the coating as well. Gane's apparatus delivers coating material to the cylindrical substrate by means of pool/trough 10.

Further, with respect to new claim 40, Applicant argues that Fukuta fails to teach or render obvious that the following mechanism includes a pair of rollers positioned on substantially the same horizontal plane and pressing against the outer peripheral surface. It is noted that Fukuta et al. illustrates in Figure 4 and 5a-b that first and second following rollers 36, 37 are positioned on substantially the same horizontal plane against the outer peripheral surface.

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 20-21, 23-25, 27-28, and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuta et al. (US 5,749,970) in view of Ganc (US 4,728,539).

Fukuta et al. discloses an apparatus for coating the outer peripheral surface of a pillar structure comprising: a holder which holds the pillar structure in nearly vertical direction and rotates together with the held pillar structure on an axis of nearly vertical direction as a common rotating axis, wherein the holder holds the pillar structure placed thereon with one end thereof facing downward and has a pedestal rotating together with the held pillar structure on the axis of the substantially vertical direction as the common rotating axis (col. 8, lines 14-19); a supplying and coating mechanism which supplies a coating material to the outer peripheral surface of the rotating pillar structure and coats the coating material on the outer peripheral surface; a doctor blade smoothing means the one longer side end portion of which is disposed at a given position

with respect to the outer peripheral surface and which smoothes the coating surface of the coating material supplied to and coated on the outer peripheral surface; and a following mechanism comprising first and second following rollers 36, 37 which drives the smoother following the outer periphery of the pedestal/pallet so that the smoother is disposed at a given position with respect to the outer peripheral surface of the pillar structure (col. 4, line 57 to col. 5, line 18); whereby the coating material is supplied to and coated on the outer peripheral surface through the doctor blade, the coating material is delivered by a nozzle from the supplying and coating mechanism to the outer peripheral surface of the pillar structure, and the coating surface is smoothed between the outer peripheral surface and the doctor blade.

Fukuta et al. lacks a teaching of a smoother having a smoothing plate and a sheet-like elastic body provided at the longer side end portion of the smoothing plate on the side of the pillar structure. The prior art of Gane is cited for its teaching of a coating apparatus comprising a flexible/elastic blade secured to a retaining means. Gane teaches that the flexible blade of its invention achieves improved coating such as a much smoother flow of coating composition under the blade as compared to a prior art steel doctor blade, resulting in a smooth, level coating (col. 3, line 52 to col. 4, line 14, and col. 2, lines 7-45). It would have been obvious to one having ordinary skill in the art, having seen the improved results achieved by Gane, to have substituted a flexible/elastic doctor blade in the apparatus of Fukuta et al. with the expectation of achieving smoother flow of coating material under the blade and a resulting smooth, level coating.

With respect to claim 21, the doctor blade of Fukuta et al. is disposed so that its longer direction coincides with the central axis direction of the pillar structure, therefore the modified

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elastic blade would be disposed in the same position. The elastic blade would contact the outer peripheral surface of the pillar structure, as similarly illustrated in Gane, between both end faces of the pillar structure.

As to claim 23, Fukuta et al. teaches that the holder has a cam which is disposed on the side of another end of the pillar structure placed and held on the pedestal and rotates on the axis of the vertical direction as the common rotating axis (col. 7, lines 24-36). As to claim 24, the outer peripheral shape of the pedestal and that of the cam are nearly the same. As to claim 25, a centering means holds the pillar structure and the pedestal and/or the cam in a given positional relation.

As to claim 27, the following mechanism has first and second following rollers 36, 37 which are disposed at a given distance from each other and move backward and forward following the outer periphery of the cam while contacting with the outer periphery of the cam together with the supplying and coating mechanism and the smoother, and the first and second following rollers are disposed so that the angle formed by a straight line passing through the centers of the respective rollers and a tip portion of the smoother is a given angle (see Figure 4).

As to claim 28, Fukuta et al. teaches third and fourth following rollers where the rotating axis of the third following roller and that of the first following roller are common and the rotating axis of the fourth following roller and that of the second following roller are common in col. 5, lines 19-28.

As to claim 32, it is the Examiner's position that the hardness of a flexible/elastic blade in the modified process of Fukuta et al. would have been determined through routine



experimentation depending upon the specific coating materials used, the speed of rotation of the pillar structure, and the coating thickness desired, etc., in the absence of a showing of criticality.

As to claim 33, Gane teaches that the elastic blade may comprise rubber (col. 3, lines 18-19).

As to claim 34, Fukuta et al. teaches that the outer periphery of the pedestal and/or the cam comprise stainless steel or ceramics (col. 5, lines 34-40).

As to claim 35, Fukuta et al. discloses that its original doctor blade should be made of stainless steel or ceramics to provide durability (col. 5, lines 29-31). For this reason, it would have been obvious for the retaining means of the flexible blade in the apparatus of Fukuta et al. in view of Gane to similarly be made of stainless steel or ceramics -- to provide durability.

As to claim 36, the shape of a section of the pillar structure cut along a plane perpendicular to the central axis of the pillar structure is circular or elliptical (see Figures).

As to claim 37, Fukuta et al. teaches that its pillar structure is a honeycomb structure comprising a plurality of cells which are flow paths for fluid.

As to claim 38, Fukuta et al. lacks a disclosure of supplying and coating mechanism and smoother which can rotate together along the outer periphery of the pillar structure. However it is the Examiner's position that it would have been obvious for an engineer having ordinary skill in the art to have reversed the means for relative movement (i.e., the pillar structure is stationary while the coating and smoothing mechanism rotate around the pillar structure) with the

expectation of equivalent and similar results since relative movement between the substrate and coating and smoothing mechanism is what is required.

As to claim 39, Fukuta et al. also discloses a method of using the apparatus discussed above with respect to claim 20 comprising: holding the pillar structure by the holder; supplying the coating material from the supplying and coating mechanism on the outer peripheral surface of the pillar structure and coating the coating material thereon while rotating the pillar structure and the holder on the axis of vertical direction as a common rotating axis; and smoothing the coating surface of the supplied and coated coating material between the outer peripheral surface and the sheet-like elastic body.

As to claim 40, Fukuta et al. illustrates in Figure 4 and 5a-b that first and second following rollers 36, 37 are positioned on substantially the same horizontal plane against the outer peripheral surface.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kirsten C Jolley/  
Primary Examiner, Art Unit 1792

kcj